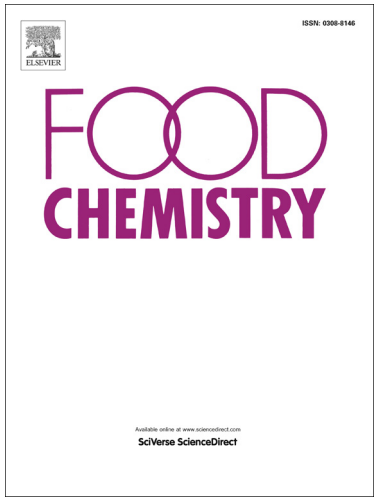

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Verification of fresh grass feeding, pasture grazing and organic farming by cows farm milk fatty acid profile

Edoardo Capuano[1]*, Grishja van der Veer[1], Rita Boerrigter-Eenling[1], Anjo Elgersma[2], Jan Rademaker[3], Adriana Sterian[1], Saskia van Ruth[1].

[1] RIKILT – Institute of Food Safety, Wageningen University and Research Centre, P.O. Box 230, 6700 AE Wageningen, The Netherlands

[2] Independent scientist, PO Box 323, 6700 AH Wageningen, The Netherlands.

[3] Qlip N.V. - Postbus 119, 7200 AC Zutphen, The Netherlands.

* Correspondence to: Edoardo Capuano, RIKILT – Institute of Food Safety, Wageningen UR, P.O. Box 230, 6700 AE Wageningen, The Netherlands. Tel: +31-317-480356; Fax: +31-317-417717; E-mail: edoardo.capuano@wur.nl

ABSTRACT

The present study investigated the use of fatty acid (FA) profiling in combination with chemometric modelling to verify claims for cow milk in terms of fresh grass feeding, pasture grazing and organic/biodynamic farming. The FA profile was determined for 113 tank milk samples collected in The Netherlands from 30 farms over four different months, and used to develop classification models based on the PLS-DA algorithm. Milk from cows with daily rations of fresh grass could be successfully distinguished from milk from cows with no fresh grass in their diet. Milk from cows at pasture could easily be distinguished from milk from stabled cows without fresh grass in the diet, but the correct prediction of milk from stabled cows fed fresh grass indoors proved difficult. The FA profile of organic/biodynamic milk was